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EXAMINER	
CURS, NATHAN M	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/043,596	BARBIER ET AL.	
	Examiner	Art Unit	
	Nathan Curs	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-33 and 35-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Margalit et al. ("Martgalit") (US Patent No. 6844403) in view of Bloom (US Patent No. 6104513).

Regarding claims 1 and 19, Margalit discloses an apparatus usable in a free-space optical communication system, comprising: a free-space optical communication terminal having: a mounting fixture to allow at least a portion of the communication terminal to be mounted in a window to allow the communication terminal to receive a light beam from the free-space optical communication system (col. 5, line 56 to col. 6, line 16); and a feature to allow the communication terminal to compensate for dynamics of the window onto which the communication terminal is mounted via the mounting fixture (col. 3, line 66 to col. 5, line 45 and col. 6, lines 23-46). Margalit does not disclose mounting the terminal to a window. However, Bloom discloses a free-space terminal to a window (col. 3, lines 20-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the terminal of Margalit to a window, as taught by Bloom, since mounting to a window would require less modification to the window compared to mounting in the window.

Regarding claims 2 and 20, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively, where the window inherently comprises an indoor surface, but the combination does not disclose that the mounting fixture allows the

communication terminal to be mounted to an indoor surface of the window. However Margalit discloses transmitting between buildings in addition to transmitting between floors (Margalit: col. 5, lines 59-64). It would have been obvious to one of ordinary skill in the art at the time of the invention that the window mounting could be on the interior of the window for the case of transmitting between buildings in the combination of Margalit and Bloom, to provide the advantage of removing the terminal from outside environmental conditions.

Regarding claim 3, the combination of Margalit and Bloom discloses the apparatus of claim 1 wherein the mounting fixture allows the communication terminal to be mounted to an outdoor surface of the window (Bloom: col. 3, lines 20-35 as applicable to the combination for between-floor and/or between-building transmission).

Regarding claims 4 and 21, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively wherein the mounting fixture comprises glue between the portion of the communication terminal and a surface of the window (Bloom col. 3, lines 20-35).

Regarding claims 5 and 22, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively wherein the mounting fixture comprises a plate to support the communication terminal, and wherein the plate is structured to be attached to the window (Margalit: fig. 5 and Bloom: fig. 1 and col. 3, lines 20-35).

Regarding claims 6 and 23, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively wherein the mounting fixture comprises a fastener device to fasten the portion of the communication terminal to a surface of the window (Bloom: col. 3, lines 20-35 as applicable to the combination for between-floor and/or between-building transmission).

Regarding claim 7, the combination of Margalit and Bloom discloses the apparatus of claim 6, but does not disclose that the fastener device comprises at least one of a hook and loop fastener, a passive vacuum device, an active vacuum device, a bracket, a screw, and a rivet. However, the examiner takes official notice that these fastener devices are very well known in the surface mounting art for mounting objects to glass, or in the case of the window frame: wood, metal, plastic or other materials. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use at least one of a hook and loop fastener, a passive vacuum device, an active vacuum device, a bracket, a screw, and a rivet for the mounting fixture.

Regarding claims 8 and 24, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively wherein one of the dynamics of the window includes vibration of the window, and wherein the feature to allow the communication terminal to compensate for characteristics of the window includes a fast steering mechanism to compensate for positional changes of the communication terminal caused by the vibration of the window (Margalit: col. 2, lines 5-32).

Regarding claim 9, the combination of Margalit and Bloom discloses the apparatus of claim 8 wherein the fast steering mechanism comprises a steering mirror to steer a light beam received by the communication terminal onto a position sensor, the steering mirror being configured to move to maintain alignment of the light beam on the position sensor, as positional changes of the communication terminal occur as a result of the vibration of the window (Margalit: fig. 1 and col. 2, lines 5-32).

Regarding claim 10, the combination of Margalit and Bloom discloses the apparatus of claim 8 wherein the fast steering mechanism comprises: a mirror to direct a light beam received by the communication terminal onto a position sensor; and an actuator to adjust a position of an

optical subassembly of the communication terminal, if the communication terminal undergoes a positional change as a result of the vibration of the window, as detected by the position sensor via the light beam directed onto the position sensor by the mirror (Margalit: col. 2, lines 5-32).

Regarding claims 11, 12, 25 and 26, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively, and discloses the terminal including a common aperture to transmit into free-space and to receive from free-space an optical signal having a transmit beam at a first wavelength and the light beam at a second wavelength (Margalit: fig. 1 and col. 2, lines 41-57). The combination does not disclose that the terminal includes a weight that is selected to be within the stress limit of the window. However, the examiner takes official notice that the components of the combination MEMS based terminal are well known in the art for being small and lightweight. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal mounted to the window would be within the stress limit of the window in order to perform ongoing and reliable operation without damaging the window. Further, the combination does not disclose that the terminal includes a size that is selected to reduce occupation of the area of the window. However, Margalit and Bloom both disclose MEMS device components that the examiner takes official notice for being well known in art as being of small size relative to well known window dimensions for buildings. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal size of the combination would be small relative to the area of the window in order to provide the benefit of maintaining the windows function of providing a view out of the building and allowing environmental light into the building for room illumination.

Regarding claim 13, the combination of Margalit and Bloom discloses the apparatus of claim 1 wherein the feature to allow the communication terminal to compensate for characteristics of the window includes a common aperture to transmit into free space and to

receive from free space an optical signal having a transmit beam at a first wavelength and a receive beam at a second wavelength, respectively (Margalit: col. 2, lines 41-57).

Regarding claims 14 and 27, the combination of Margalit and Bloom discloses the apparatus of claims 1 and 19 respectively, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture attached to a ceiling adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to the ceiling adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 15, the combination of Margalit and Bloom discloses the apparatus of claim 1, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture attached to a wall adjacent to the window. However, it would have been obvious to one of ordinary skill in

the art at the time of the invention to mount the base fixture to the wall adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 16, the combination of Margalit and Bloom discloses the apparatus of claim 1, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture is a frame fixture attached to a frame adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a frame adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 17, the combination of Margalit and Bloom discloses, the apparatus of claim 1, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch,

router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture is a floor fixture attached to the floor adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a floor adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 18, the combination of Margalit and Bloom discloses the apparatus of claim 1, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture is a corner fixture attached to a corner adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a corner adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 28, Margalit discloses an apparatus, comprising: a free-space optical communication transceiver having: a mounting fixture to mount at least a portion of the communication transceiver in a window to allow the communication transceiver to communicate with the free-space optical communication system (col. 5, line 56 to col. 6, line 16); a feature to allow the communication transceiver to compensate for dynamics of the window onto which the

communication transceiver is mounted via the mounting fixture (col. 3, line 66 to col. 5, line 45 and col. 6, lines 23-46); and a common aperture to transmit into free space and to receive from free space an optical signal having a transmit beam at a first wavelength and a receive beam at a second wavelength, respectively (col. 2, lines 41-57). Margalit does not disclose mounting the terminal to a surface of window. However, Bloom discloses a free-space terminal to a window (col. 3, lines 20-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the terminal of Margalit to a window, as taught by Bloom, since mounting to a window would require less modification to the window compared to mounting in the window.

Regarding claim 29, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the feature to allow the communication terminal to compensate for dynamics of the window comprises a tracking system including a movable steering mechanism and a position sensor, wherein the movable steering mechanism is operatively coupled to receive the optical signal from free space and to steer the optical signal onto the position sensor (Margalit: col. 2, lines 5-32).

Regarding claim 30, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the movable steering mechanism includes at least one of a movable steering mirror, lens, and gimbal system with actuators (Margalit: fig. 1 and col. 2, lines 5-32).

Regarding claim 31, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the position sensor includes at least one of a quadrant-cell detector, a lateral effect cell, a fast charge coupled device (CCD), a complementary metal oxide semiconductor (CMOS) camera, and a data detector in cooperation with a steering mechanism to perform nutation (Margalit: fig. 7 and col. 5, line 56 to col. 16).

Regarding claim 32, the combination of Margalit and Bloom discloses the apparatus of claim 29, further comprising a controller operatively coupled to process an output of the position sensor (Margalit: col. 3, lines 6-11).

Regarding claim 33, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the communication transceiver further comprises: a first beam splitter; a second beam splitter; and a detector, wherein the first beam splitter is operatively coupled to separate the optical signal into the transmit beam and the receive beam and to direct the receive beam to the second beam splitter, and the second beam splitter is operatively coupled to direct a first portion of the receive beam to the position sensor and a second portion of the receive beam to the detector (Margalit: fig. 15 and col. 7, line 39 to col. 8, line 13).

Regarding claim 35, the combination of Margalit and Bloom discloses the apparatus of claim 28, further comprising: a beam splitter; and opto-electronics, wherein the opto-electronics are operatively coupled to direct the transmit beam to the beam splitter (Margalit: fig. 7, elements 116a and 120a and fig. 10 and col. 7, lines 13-29).

Regarding claim 36, the combination of Margalit and Bloom discloses the apparatus of claim 35, further comprising an optical fiber operatively coupled between the opto-electronics and the beam splitter (Margalit: fig. 7, element 124a).

Regarding claim 37, the combination of Margalit and Bloom discloses the apparatus of claim 35 wherein the beam splitter is structured to combine the transmit beam and the receive beam into the optical signal (Margalit: fig. 10).

Regarding claim 38, the combination of Margalit and Bloom discloses the apparatus of claim 37, further comprising: a movable steering mechanism; a lens; and a mirror, wherein the movable steering mechanism is operatively coupled to direct the optical signal from the beam splitter to the lens, wherein the lens is operatively coupled to focus the optical signal onto the

mirror, and wherein the mirror is operatively coupled to direct the optical signal to free space (Margalit: fig. 10 and col. 7, lines 13-29).

Regarding claim 39, the combination of Margalit and Bloom discloses the apparatus of claim 28, further comprising: opto-electronics (Margalit: fig. 7, element116a); a light source (Margalit: fig. 7, element 126a); and a beam splitter (Margalit: fig. 10), wherein the opto-electronics are operatively coupled to direct an electrical signal to the light source, wherein the light source is configured to convert the electrical signal to the transmit beam and to direct the transmit beam to the beam splitter, and wherein the beam splitter is structured to combine the transmit beam and the receive beam into the optical signal (Margalit: col. 5, line 56 to col. 6, line 16 and col. 7, lines 13-29).

Regarding claim 40, the combination of Margalit and Bloom discloses the apparatus of claim 29 wherein the mirror is further operatively coupled to fold the optical signal at a predetermined angle (Margalit: fig. 1 and col. 2, lines 5-32).

Regarding claim 41, the combination of Margalit and Bloom discloses the apparatus of claim 29 wherein the steering mechanism comprises at least one actuator driven by at least one precision motion device (Margalit: col. 2, lines 5-32 and col. 3, lines 6-11).

Regarding claim 42, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the mounting fixture comprises glue between the portion of the communication transceiver and the surface of the window (Bloom col. 3, lines 20-35).

Regarding claim 43, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the mounting fixture comprises a fastener device to fasten the portion of the communication transceiver to the surface of the window (Bloom: col. 3, lines 20-35 as applicable to the combination for between-floor and/or between-building transmission).

Regarding claim 44, the combination of Margalit and Bloom discloses the apparatus of claim 28 wherein the dynamics of the window include vibration of the window, and wherein the feature to allow the communication transceiver to compensate for the dynamics of the window includes a fast steering mechanism to compensate for positional changes of the communication transceiver caused by the vibration of the window (Margalit: col. 2, lines 5-32).

Regarding claim 45, the combination of Margalit and Bloom discloses the apparatus of claim 28, and discloses the terminal including a common aperture to transmit into free-space and to receive from free-space an optical signal having a transmit beam at a first wavelength and the light beam at a second wavelength (Margalit: fig. 1 and col. 2, lines 41-57). The combination does not disclose that the terminal includes a weight that is selected to be within the stress limit of the window. However, the examiner takes official notice that the components of the combination MEMS based terminal are well known in the art for being small and lightweight. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal mounted to the window would be within the stress limit of the window in order to perform ongoing and reliable operation without damaging the window. Further, the combination does not disclose that the terminal includes a size that is selected to reduce occupation of the area of the window. However, Margalit and Bloom both disclose MEMS device components that the examiner takes official notice for being well known in art as being of small size relative to well known window dimensions for buildings. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal size of the combination would be small relative to the area of the window in order to provide the benefit of maintaining the windows function of providing a view out of the building and allowing environmental light into the building for room illumination.

Regarding claim 46, the combination of Margalit and Bloom discloses the apparatus of claim 28, further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture attached to a building structure adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a building structure adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 47, Margalit discloses a system, comprising: a first free-space optical communication transceiver having a common aperture to transmit into free space and to receive from free space a transmit beam at a first wavelength and a receive beam at a second wavelength, respectively and a second free-space optical transceiver to receive the transmit beam from the first free-space optical communication transceiver via free space and to transmit the receive beam to the first free-space optical communication transceiver via free space (fig. 7, col. 2, lines 41-57 and col. 5, line 56 to col. 6, line 16), wherein at least one of the communication transceivers includes: a mounting fixture to allow at least a portion of that communication transceiver to be mounted in a window (col. 5, line 56 to col. 6, line 16); and a feature to allow that communication transceiver to compensate for characteristics of the window onto which that communication transceiver is mounted via the mounting fixture (col. 3, line 66 to

col. 5, line 45 and col. 6, lines 23-46). Margalit does not disclose mounting the terminal to a window. However, Bloom discloses a free-space terminal to a window (col. 3, lines 20-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the terminal of Margalit to a window, as taught by Bloom, since mounting to a window would require less modification to the window compared to mounting in the window.

Regarding claim 48, the combination of Margalit and Bloom discloses the system of claim 47 wherein the mounting fixture comprises glue between the portion of the communication transceiver and a surface of the window (Bloom col. 3, lines 20-35).

Regarding claim 49, the combination of Margalit and Bloom discloses the system of claim 47 wherein the mounting fixture comprises a fastener device to fasten the portion of the communication transceiver to a surface of the window (Bloom: col. 3, lines 20-35 as applicable to the combination for between-floor and/or between-building transmission).

Regarding claim 50, the combination of Margalit and Bloom discloses the system of claim 47 wherein the characteristics of the window include vibration of the window, and wherein the feature to allow the communication transceiver to compensate for the characteristics of the window includes a fast steering mechanism to compensate for positional changes of the communication transceiver caused by the vibration of the window (Margalit: col. 2, lines 5-32).

Regarding claim 51, the combination of Margalit and Bloom discloses the system of claim 47 and discloses the terminal including a common aperture to transmit into free-space and to receive from free-space an optical signal having a transmit beam at a first wavelength and the light beam at a second wavelength (Margalit: fig. 1 and col. 2, lines 41-57). The combination does not disclose that the terminal includes a weight that is selected to be within the stress limit of the window. However, the examiner takes official notice that the components of the combination MEMS based terminal are well known in the art for being small and lightweight.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal mounted to the window would be within the stress limit of the window in order to perform ongoing and reliable operation without damaging the window. Further, the combination does not disclose that the terminal includes a size that is selected to reduce occupation of the area of the window. However, Margalit and Bloom both disclose MEMS device components that the examiner takes official notice for being well known in art as being of small size relative to well known window dimensions for buildings. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal size of the combination would be small relative to the area of the window in order to provide the benefit of maintaining the windows function of providing a view out of the building and allowing environmental light into the building for room illumination.

Regarding claim 52, the combination of Margalit and Bloom discloses the system of claim 47 further comprising a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), the portion of the communication terminal capable of being placed in contact with the window via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture attached to a building structure adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a building structure adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 53, the combination of Margalit and Bloom discloses the system of claim 47 wherein the feature to compensate for the characteristics of the window comprises an increased divergence in transmit and an increased receive field-of-view (Margalit: fig. 7, elements 122a and 122b and col. 2, lines 14-31).

Regarding claim 54, the combination of Margalit and Bloom discloses the system of claim 47, wherein the feature to compensate for the characteristics of the window comprises a common aperture for transmit and receive beams and that can accommodate a single steering mechanism (Margalit: fig. 1 and col. 3, lines 66-18). The combination does not disclose that the terminal includes a weight that is selected to be within the stress limit of the window. However, the examiner takes official notice that the components of the combination MEMS based terminal are well known in the art for being small and lightweight. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal mounted to the window would be within the stress limit of the window in order to perform ongoing and reliable operation without damaging the window. Further, the combination does not disclose that the terminal includes a size that is selected to reduce occupation of the area of the window. However, Margalit and Bloom both disclose MEMS device components that the examiner takes official notice for being well known in art as being of small size relative to well known window dimensions for buildings. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the terminal size of the combination would be small relative to the area of the window in order to provide the benefit of maintaining the windows function of providing a view out of the building and allowing environmental light into the building for room illumination.

Regarding claim 55, Margalit discloses a method, comprising: mounting a free-space optical communication terminal in a window (col. 5, line 56 to col. 6, line 16); transmitting a first

light beam into free space using the free-space optical communication terminal mounted in the window and receiving a second light beam from free space using the free-space optical communication terminal mounted in the window (fig. 1 and col. 3, line 66 to col. 4, line 18). Margalit does not disclose mounting the terminal to a windowpane. However, Bloom discloses a free-space terminal to a window (col. 3, lines 20-35). It would have been obvious to one of ordinary skill in the art at the time of the invention to mount the terminal of Margalit to a windowpane, as taught by Bloom, since mounting to a windowpane would require less modification to the window compared to mounting in the window.

Regarding claim 56, the combination of Margalit and Bloom discloses the method of claim 55 wherein mounting the free-space optical communication terminal to the windowpane includes directly gluing at least a portion of the free-space optical communication terminal to a surface of the windowpane (Bloom col. 3, lines 20-35).

Regarding claim 57, the combination of Margalit and Bloom discloses the method of claim 55 wherein mounting the free-space optical communication terminal to the windowpane includes fastening at least a portion of the free-space optical communication terminal to a surface of the windowpane with a fastener device (Bloom col. 3, lines 20-35).

Regarding claim 58, the combination of Margalit and Bloom discloses the method of claim 55, further comprising using a base fixture from which the communication terminal can be coupled (Margalit: fig. 7, element 116a), where at least a portion of the communication terminal is in contact with the windowpane via the mounting fixture in a manner that mechanically isolates the communication terminal from the base fixture (Margalit: fig. 7, element 124a, where optical fibers between the base fixture and the window mounted terminal mechanically isolate the terminal from the base fixture). The combination discloses that the base fixture as a switch, router or the like (Margalit: col. 5, lines 64-66), but does not disclose the base fixture attached to

a building structure adjacent to the window. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to mount the base fixture to a building structure adjacent the window, to avoid using unnecessarily long fiber runs between the base fixture and window terminal, and to keep the base fixture out of the way of other objects occupying the room of the building having the window.

Regarding claim 59, the combination of Margalit and Bloom discloses the method of claim 55 including mounting the free-space optical communication terminal to the windowpane (Margalit: col. 5, line 56 to col. 6, line 16), but does not disclose mounting the free-space optical communication terminal adjacent to a corner of the windowpane. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to locate the windowpane-mounted terminal adjacent to a corner of the windowpane, in order to provide the benefit of moving the terminal away from the center area of the window to maintain the window's function of providing a view out of the building and allowing environmental light into the building for room illumination.

Regarding claim 60 the combination of Margalit and Bloom discloses the method of claim 55, further comprising mounting a plurality of free-space optical communication terminals to at least one of a corresponding plurality of windowpanes and to a single windowpane (Margalit: fig. 7, and col. 5, line 56 to col. 6, line 16).

3. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Margalit et al. ("Martgalit") (US Patent No. 6844403) in view of Bloom (US Patent No. 6104513) as applied to claims 1-33 and 35-60 above, and further in view of Mendenhall et al. ("Mendenhall") (US Patent No. 6590685).

Regarding claim 34, the combination of Margalit and Bloom discloses the apparatus of claim 33, but does not disclose a filter operatively coupled to filter unwanted signals from the receive beam prior to direction of the receive beam to the second beam splitter. However, Mendenhall discloses a free-space transceiver system with alignment, where an optical filter is used in the receive signal path before detection (fig. 4, element 72 and col. 4, lines 10-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an optical filter in the receive signal path before detection, in order to provide the benefit of filtering out unwanted signals (e.g. sunlight) from the received signal, as taught by Mendenhall.

Conclusion

4. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. R. Sedighian

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PRIMARY EXAMINER